Radiative Heat Conductivity Component of n-Hexane in the Wide Neighborhood of Critical Point

S.N. Mikhailova, V.A. Aliaev, F.M. Gumerov, and A.N. Sabirzianov
Kazan State Technological University
Kazan, Russia

B. Le Neindre
L.I.M.H.P.- C.N.R.S., Institut Galilée
Université Paris Nord
Av. J. B. Clément
93430 Villetaneuse, France

The flat layer method (horizontal: 5.32 mm thickness, surface emissivity – 0.25) associated with process interferometer visualization has been used to measure the relative value of the heat transfer component $\chi = 1 + \lambda_?/\lambda_k$ of n-hexane near the critical enhancement point including both liquid and supercritical states. The liquid state measurements were performed in temperature range 504.5 - 507.0 K (T_c = 507.2 K) and the pressure intervals 3.08 - 3.55 MPa. The supercritical state was realized in the range of 507.75 - K along the isobars 3.12, 3.19, 2.34, 3.44, 3.59, 3.77, 3.82, 4.18 (P_c = 3.0282 MPa. The χ estimated measurement uncertainty in the range of the investigated state parameters changes from 2.2 to 4.5%.